Claims

1. A shaping tool (1) with a structured surface for creating structures on glass (2), having

- a rolling cylinder (3), comprising a metal hollow cylinder (7), on whose outer jacket a metal shaping sheet (8), which is provided with recesses (8a) corresponding to the negative of the glass structures to be made, is put into intimate large-area contact;

- a shaft (5) for continuously driving the rolling cylinder (3), which shaft extends through the metal hollow cylinder (7);

- two drivers (4), which are fixedly mounted on the shaft (5) at the level of the face ends of the metal hollow cylinder (7) and are in positive operative engagement with the hollow cylinder (7); and

- an electric heater (6), which is disposed in electrically insulated fashion between the shaft (5) and the metal hollow cylinder (6), with an additional thermal insulation from the shaft.

2. The shaping tool of claim 1, characterized in that the material comprising the metal hollow cylinder (7) is a nickel wrought alloy, preferably such an alloy identified by material No. 2.4816.

3. The shaping tool of claim 1 ~~or 2~~, characterized in that the material of the shaping sheet (8) comprises a wear-resistant, microstructurable, heat-conducting material with the least possible inclination to adhere to the glass.

4. The shaping tool of claim 3, characterized in that the sheet (8) comprises a PtAu5 alloy, with a pure PtAu5 material or alternatively with an oxide-dispersed PtAu5 material.

a 5. The shaping tool of claim 3 ~~or 4~~, characterized in that the sheet (8) comprises a foundation material with a coating applied to it.

a 6. The shaping tool of ~~one of~~ claim~~s~~ 1 ~~through 5~~, characterized in that the shaping sheet (8) is hot-isostatically pressed (hipped) onto the metal hollow cylinder (7).

a 7. The shaping tool of ~~one of~~ claim~~s~~ 1 ~~through 6~~, characterized in that the structuring recesses (8a) are made in the shaping sheet (8) by precision turning using a diamond tool.

a 8. The shaping tool of ~~one of~~ claim~~s~~ 1 ~~through 7~~, characterized in that the drivers (4) have at least three symmetrically distributed trapezoidal claws (4a), and complementary trapezoidal recesses (3a), which are in mutual operative engagement with the claws (4a) by small contact faces, are embodied on the face end of the metal hollow cylinder (7).

a 9. The shaping tool of ~~one of~~ claim~~s~~ 1 ~~through 8~~, characterized in that the drivers (4) have axial slits (4b) toward the hollow cylinder.

a 10. The shaping tool of ~~one of~~ claim~~s~~ 1 ~~through 9~~, characterized in that the shaft (5), embodied as a hollow shaft, is supported in locating-nonlocating bearings (12, 13) with prestressed spindle bearings.

a 11. The shaping tool of ~~one of~~ claims 1 ~~through 10~~, characterized in that the drivers (4) and the shaft (5) are braced together axially in the manner of a tie rod by means of shaft nuts (10) and cup springs (11).

a 12. The shaping tool of claim 10 ~~or 11~~, characterized in that the shaft (5) has a plurality of longitudinal slits (5a) distributed uniformly over its circumference.

a 13. The shaping tool of ~~one of~~ claims 1 ~~through 12~~, characterized in that a ceramic cylinder (14) is slipped onto the shaft (5) in a manner secure against relative rotation and on its jacket receives the hot conductor (6c) of the electric heater (6), and that a quartz glass tube (15) for electrical insulation from the adjacent hollow roller (7) is slipped onto the ceramic cylinder (14) having the hot conductors (6c).

14. The shaping tool of claim 13, characterized in that a PtRh10 strip (6c) is provided as the hot conductor, and it wound into a coil in grooves (14a) of the ceramic cylinder 14.

a 15. The shaping tool of ~~one of~~ claims 1 ~~through 14~~, characterized in that a slip ring assembly (16) is provided on the shaft (5), for supplying energy to the heater (6).

a 16. The shaping tool of claim 10 ~~or one of the following claims~~, characterized in that at least one ceramic tube (17) for supplying cooling air is provided in the interior of the hollow shaft (5).

a 17. The shaping tool of claim 10 ~~or one of the following claims~~, characterized in that a thermocouple (18) is installed in the interior of the hollow shaft (5).

18. The use of the shaping tool (1) of ~~one of~~ claims 1 ~~through 17~~ for making precision structures in a channel plate of flat screens.